

## A Review of *Griselda*, with Descriptions of a Related New Genus and Two Species

(Lepidoptera : Tortricidae)

JERRY A. POWELL

*University of California, Berkeley*

The genus *Griselda* was proposed by Heinrich (1923) to accommodate three Nearctic species. The group was distinguished from the large, Holarctic genus *Epinotia* Hübner in having a widely bifurcate uncus. In *Epinotia* the uncus is simple or single with a bifid tip. The three American *Griselda* species are: *radicana* (Walsingham), the type of the genus, in the Pacific Northwest; *pennsylvaniana* (Kearfott), a widespread species in eastern United States; and *gerulae* Heinrich, known only from the types collected in Pennsylvania. The three comprise a loosely knit assemblage sharing little similarity in superficial appearance and wide divergence in genitalia form and habits. To these, Obraztsov (1945) added two Palearctic species, *fractifasciana* (Haworth) and *vacciniana* (Zeller). In illustrating the British species, Bradley (1959) treated the former as a synonym of *stagnana* (Schiffermüller) and the latter as synonymous with *myrtillana* (Westwood).

In *G. radicana* the bifurcate uncus consists of strongly sclerotized, spur-like points projecting posteriorly from the "shoulders" of the tegumen. In *G. gerulae* the tegumen is rounded in shape, differing markedly from *Epinotia* and *G. radicana* in this respect, and bears short, sclerotized projections at the apices of the ventral, inner margins (just posterior of the *socii*). *G. pennsylvaniana*, although similar to *gerulae* in tegumen, valva, and *socii* form, bears no projections from the posterior margin of the tegumen. Both of the latter species exhibit paired, essentially membranous lobes which project anteriorly from within the inner face of the tegumen. In addition, the large, rounded *socii* and valva form with a well-defined cucullus separate the latter two species from *radicana*. Walsingham's species has the apices of the *socii* pointed ("triangular" of Heinrich's key) and the valva narrow (both characteristics essentially as in the *hopkinsana-pulsatillana* group of *Epinotia*). Heinrich interpreted both types of tegumen projections as comparable derivations of the bifid uncus of *Epinotia*. However, in studying these species, along with two undescribed ones which are similar to *gerulae* in genitalia form, I do not agree and am unable to consider them congeneric with *radicana*.

It appears to me that the projections from the margin of the tegumen are neither constant nor comparable characters in this group. Moreover, the *gerulae* group appears to warrant generic standing based on other

genitalic features, whether or not *radicana* is to be considered apart from *Epinotia*. Besides morphological differences, *radicana* also differs in its biology; it is a conifer feeder which flies in summer and fall. In contrast, the other four species fly in early spring, in the manner of members of *Pseudexentera*. One of the four has been associated with live oak. As was pointed out by Heinrich for *gerulae*, the two new species are also unlike *Epinotia* in wing patterns and might be mistaken for *Gretchena* or *Pseudexentera* were it not for the costal fold. *G. radicana* superficially resembles *Epinotia hopkinsana*, another conifer feeder.

Thus the following arrangement is proposed to include moths of this group.

### GENUS GRISELDA Heinrich

*Griselda* Heinrich, 1923, U. S. Natl. Mus. Bull., 123: 186; Obraztsov, 1945, Zeitschr. Wiener Entomol. Ges., 30: 33.

#### GRISELDA RADICANA (Walsingham)

*Paedisca radicana* Walsingham, 1879, Ill. Lepid. Het. Brit. Mus., 4: 53, pl. 72, fig. 5. *Griselda radicana*, Heinrich, 1923, U. S. Natl. Mus. Bull., 123: 186, figs. 36, 329.

This species was described from "Rouge River, Oregon, May 1871." However, according to the Walsingham itinerary given by Essig (1941), Walsingham collected in California during May 1871 and did not arrive in Oregon until September of that year. Moreover, I know of no Rouge River in California or Oregon and none is mentioned in the Walsingham itinerary. Judging from the map given by Essig, the Walsingham party camped at or near the Rogue River in the vicinity of the present Grants Pass, Josephine County, Oregon at about the end of May or early June 1872. Thus it seems likely that the type locality should actually be the Rogue River in southwestern Oregon.

Heinrich (1923) cited specimens from Seaview in south coastal Washington and from Victoria, at the southern end of Vancouver Island, British Columbia. Material from both localities had been reared from *Picea*. The U. S. National Museum also has specimens reared from *Pseudotsuga menziesii* from Springfield, Lane County, Oregon (Hopk. No. 33477E, V. M. Carolin collector). The species is now known to range eastward to Ontario (Sippell, *et al.*, 1962) and Quebec (McLeod and Blais, 1961) and is said by Blais (1961) to be found commonly across Canada. Blais studied the biology of *G. radicana* in Quebec, where the preferred host is *Picea glauca*. Other plants used include species of *Picea* and *Abies balsamea*. The moths fly in late August and September and deposit eggs which overwinter at the base of the needles. The larvae feed during June

and July on the current year's foliage and drop to the ground for pupation.

Moths from Pacific Northwest areas generally are pale greyish, the forewings having a well-defined, outwardly angulate basal patch, outwardly edged or wholly red-brown, and a band from mid costa towards tornal area, turned down and flared just before tornus. A single specimen from central coastal California (Mill Valley, Marin Co., 2 October 1958, H. B. Leech collector) in the California Insect Survey is referred here tentatively. The forewings are dull reddish brown, with the markings dark grey, similar in form to typical *radicana*, but with the basal patch less angulate. The male genitalia are not distinguishable from Oregon and British Columbia specimens.

#### GRISELDA HYPsidRYAS (Meyrick), new combination

*Eucosma hypsidryas* Meyrick, 1925, Exot. Microlep., 3: 140; Clarke, 1958, Cat. Type Spec. Brit. Mus. Meyr., 3: 367, pl. 182, fig. 2.

On the basis of a photograph of the male genitalia given by Clarke, it appears that this species is related to *G. radicana*. In the original description Meyrick cites *hypsidryas* as having been bred from buds of *Picea morinda* in the mountains of northern India.

#### GRISELDA STAGNANA (Schifferrmüller)

*Tortrix stagnana* Schifferrmüller, 1776, Syst. Verz. Schmett., Wienergeeg., p. 131.

*Griselda stagnana*, Bradley, 1959, Entomol. Gazette, 10: 72 (synonymy), pl. 10.

*Tortrix fractifasciana* Haworth, 1812, Lep. Brit., 3: 466 (not seen).

*Rhopobota fractifasciana*, Pierce and Metcalfe, 1922, Genitalia Brit. Tort., p. 75, pl. 26.

*Griselda fractifasciana*, Obraztsov, 1945, Zeitschr. Wiener Entomol. Ges., 30: 34.

*G. stagnana* is a grey, *Phaneta*-like moth known in England and central Europe (Meyrick, 1895). Ford (1949) states that the species has two generations in England, where larvae are to be found on the flowers and seeds of *Scabiosa columbaria* (Dipsaceae) in July and at the base of the plants in September. The moths fly in April and May and again in August.

#### GRISELDA MYRTILLANA (Westwood)

*Sericoris myrtillana* Westwood, 1857, Brit. Moths, 2: 146, pl. 89, fig. 15.

*Griselda myrtillana*, Bradley, 1959, Entomol. Gazette, 10: 72 (synonymy), pl. 11.

*Grapholitha vacciniana* Zeller, 1846, Isis von Oken, p. 248.

*Rhopobota vacciniana*, Pierce and Metcalfe, 1922, Genitalia Brit. Tort., p. 75, pl. 26.

*Griselda vacciniana*, Obraztsov, 1945, Zeitschr. Wiener Entomol. Ges., 30: 34.

This greyish moth with dark basal patch, median and subapical trans-



verse bands, ranges through north and central Europe and the British Isles. In England the larvae feed on *Vaccinium myrtillus* (Vacciniaceae) during July and August, the adults flying in May and June (Meyrick, 1895).

Judging from the figures given by Pierce and Metcalfe (1922) and Bradley (1959), both this and the preceding species may provisionally remain in *Griselda*. Their biologies differ from *G. radicana*, and further studies might indicate that the latter should not be considered congeneric with *stagnana* and *myrtillana*. However, the European species seem wholly unrelated to members of the following genus.

### **Chimoptesis** Powell, new genus

*Head*.—Labial palpus moderately elongate, broadly expanded by spreading scales, not much upturned; antenna slightly longer than one-half forewing length, scaled dorsally and ventrally, anterior margin densely short ciliate in male; tongue unscaled; scaling of front appressed, of crown dense, bushy. *Forewing*.—Smooth scaled; elongate-narrow, little broadened towards termen; costal fold present in male, tightly appressed, enclosing a fine brush of elongate hairs and an imbricate series of modified, broad scales; costa slightly curved beyond, costa of female slightly, uniformly curved from base to apex; apex rather acute; termen concave above tornus; dorsum very slightly curved. Twelve veins, all separate: Sc, enclosed by costal fold in male, nearly straight;  $R_1$  from slightly before middle of discal cell,  $R_2$  from three-fifths, nearer to  $R_3$  than to  $R_1$ ;  $R_4$ ,  $R_5$ , and  $M_1$  approximate at base, diverging; internal vein M in cell well developed, from slightly before midpoint between  $R_1$  and  $R_2$ ;  $M_2$  and  $Cu_1$  rather strongly curved, almost parallel;  $Cu_2$  from about three-fifths of discal cell, slightly upcurved at tornus;  $A_1$  scarcely evident at margin; furcate basal stem  $A_2 + A_3$  about one-third the length of the whole vein. *Hindwing*.—About one-third broader than forewing; costa convex towards middle; apex acute; termen straight or slightly convex; dorsum very slightly convex before anal curve. Hair tufts of cubital and anal veins rather sparse, erect, spreading. Sc adjoining R for a distance at base; distal branch of R and  $M_1$  closely parallel on basal third, then sharply divergent, enclosing apex;  $M_2$  well separated from  $M_3 + Cu_1$  at base, only very slightly curved; basal stem of  $M_3 + Cu_1$  about three-fifths their length;  $Cu_2$  from beyond three-fifths of discal cell, almost straight; all three A veins distinct to margin,  $A_2$  curved before margin. *Male genitalia*.—Uncus lacking, posterior margin of tegumen entire or with sclerotized projections at posterior bases of socii; tegumen broadly rounded, inner face of tegumen bearing two elongate projections, directed anteriorly; socii large, well developed, broad from base; gnathos reduced, very weakly sclerotized. Valvae simple, cucullus well defined, densely hairy anteriorly, with dense, short, strong spines posteriorly; neck rather strongly constricted, without well-developed spines or hair clusters; clasper lacking. Aedeagus simple, straight, stout. *Female genitalia*.—Papillae anales simple, rotated 90° outward, densely clothed with elongate setae exteriorly; sclerotized portion of segments IX + X produced into a lobe dorsad or simple; posterior apophyses short, stout; segment VIII narrowly sclerotized on dorsal half with a pair of small projections of the sclerotized band cephalad. Sterigma fused with sternite VII, sclerotized, extending laterally into arms angling cephalad; ductus bursae narrow, simple, looped, or with

a twist just before corpus bursae; signa narrow, round, thorn-like; surface of corpus bursae densely covered with unpigmented spiculae.

TYPE OF THE GENUS.—*Chimoptesis chrysopyla* Powell, new species.

As discussed above the genus is related to *Epinotia* (Eucosmini), differing particularly in the form of the uncus and socii. According to characteristics of the wing venation and male genitalia, *Chimoptesis* is also related to the *Eucosma-Phaneta* (= *Thiodia*, Heinrich not Hübner) group and will run to *Eucosma* in Heinrich's (1923) key. The wing venation is quite similar to *Eucosma* and *Pseudexentera*; and in wing shape and general superficial appearance, the present genus rather resembles the latter as well as *Zeiraphera*. However, the well-defined costal fold distinguishes *Chimoptesis* from *Zeiraphera*, *Gretchena*, *Pseudexentera*, and *Phaneta* (as defined by Heinrich). From all these and *Eucosma* as well, it differs strikingly in structure of the male genitalia. The unique tegumen with its inner projections, together with the enlarged socii, are unlike any other Olethreutinae I have examined.

### ***Chimoptesis chrysopyla* Powell, new species**

A moderate-sized, *Pseudexentera*-like moth, having the narrow forewings somewhat variably marked, but showing a fairly well-defined basal patch on a pale greyish olivaceous mottled ground.

HOLOTYPE MALE.—Length of forewing 8.3 mm. *Head*.—Labial palpus moderately large, length of second segment about 1.1 times eye diameter, greatly expanded dorsally and ventrally into a broad, roundish tuft which about one-half obscures the appressed-scaled third segment; latter about one-half the length of second; scaling mixed whitish and grey exteriorly, the grey forming a dark shade diagonally across the broad tuft; whitish interiorly. Scaling of antenna complete, dorsally grey with whitish tips, ventrally white. Scale tufts of crown elongate, spreading, scales grey with bifid, white tips; of front white, appressed. *Thorax*.—Hoary grey above, the greyish scales broadly whitish towards apices. Underside shining white; legs grey exteriorly, banded with white, pro- and mesothoracic darker. *Forewing*.—Length about 3.2 times width, appearing quite broadened distally due to the costal fold and a broad fringe, especially towards tornus; costal fold over one-third forewing length, tightly appressed, enclosing a brush of about 30 elongate, white hairs and an imbricate series of about 30 broad, rounded, dark scales along the wing surface below Sc. Ground color white with occasional greyish scales interspersed, giving a slightly superficial olivaceous tinge, and with more or less defined dark grey markings: basal one-third of wing, enclosing a paler area at dorsum and becoming less distinct towards costa, costal fold banded pale and dark grey; outer margin of basal area narrowly black, concave above dorsum, with a few pale brown scales outwardly; a series of grey spots along costa beyond fold and around apex and termen before fringe; grey mottling beyond cell becoming more restricted and forming blackish spots on a whitish ground in dorsal half, the spots forming an ill-defined line at outer two-thirds from about end of cell, curved outwardly and recurved to dorsum,

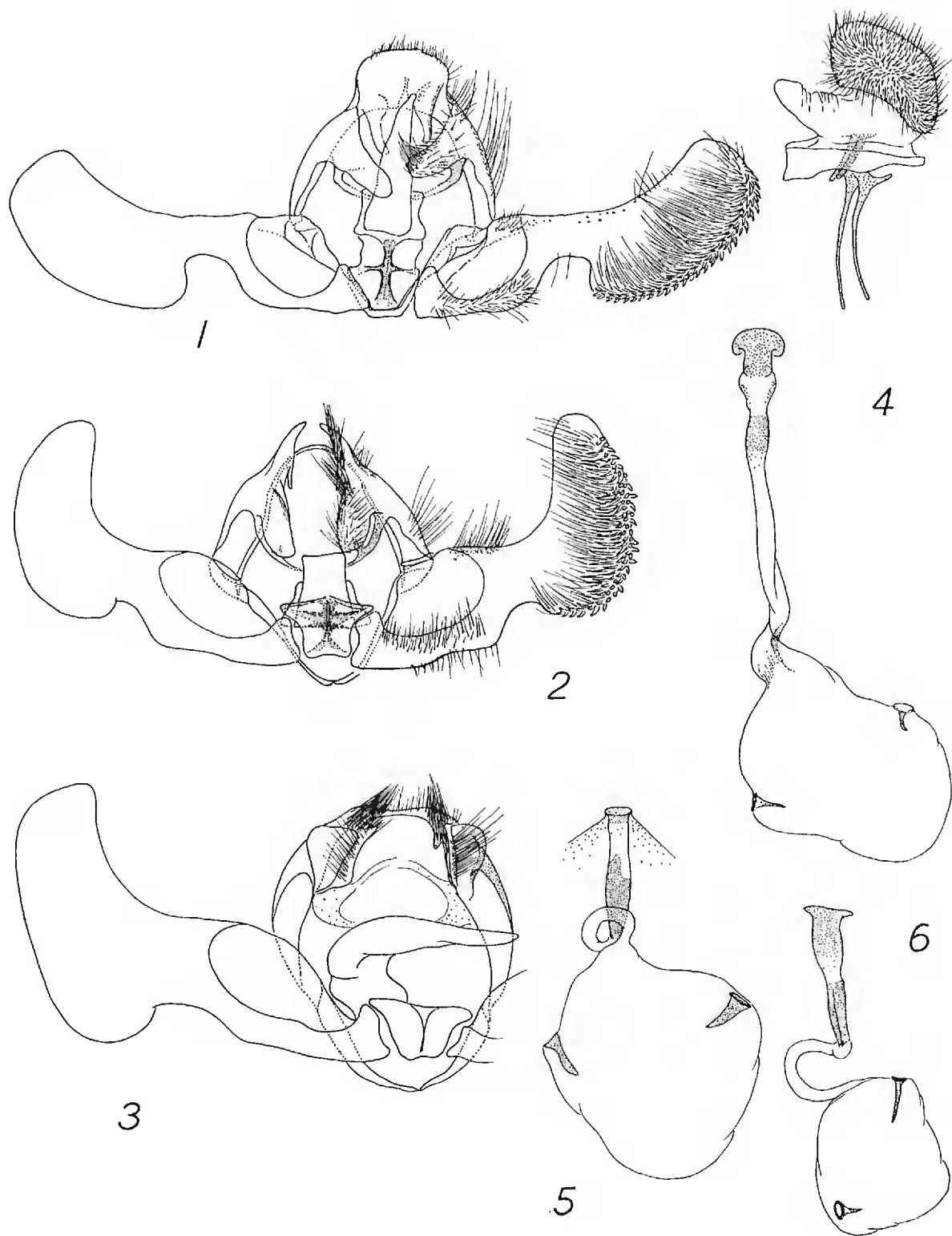
defining an irregular, pale dorsal blotch between it and the basal patch; this blotch, the palest area of the wing, encloses a dark, vertical line from dorsum. Fringe dark grey, becoming paler towards tornus, a dark grey spot at its termination below tornus. Underside rather dark grey, the whitish interspaces of outer half of costa reproduced. Fringe pale basally. *Hindwing*.—Dark grey dorsally, the broad fringe whitish with a dark basal band. Underside similar, slightly paler. *Abdomen*.—Pale greyish dorsally; underside and genital tuft white. Genitalia as in Fig. 1 (drawn from paratype, Berkeley, JAP prep. No. 565, four preparations examined); posterior margin of tegumen entire; aedeagus with a small, subapical prong.

*Allotype female*.—Length of forewing 8.6 mm. Essentially similar to male but having the forewing markings darker and more distinct. Costal area in basal third rather whitish (paler than fold in male); basal patch blackish, margined outwardly by a dark black, straight, vertical line; pale area near base on dorsum indistinct, margined inwardly by a discernible black line; pale area beyond cell more extensive towards costa than in male, the spotting considerably more contrasting. Genitalia as in Fig. 4 (drawn from topoparatype, JAP prep. No. 1268, three preparations examined); dorsum of segments IX–X produced into a bulbous lobe; ductus bursae with a wide sclerotized ring just below sterigma and a small sclerotized spot dorsally.

*Holotype male* and allotype female, GOLDEN GATE PARK, SAN FRANCISCO, CALIFORNIA, 26 February 1960 (J. Powell), deposited in the California Academy of Sciences. Paratypes (254), all California, as follows. Marin Co.: Mill Valley, 5 ♀, 4–9 February 1926 (E. P. Van Duzee). Contra Costa Co.: Walnut Creek, 1 ♂, 7 February 1962, at light, 53–54° F (J. Powell). Alameda Co.: Berkeley, 1 ♂, 1 March 1959, at light, 1 ♂, 10 February 1960, at light (J. Powell); Strawberry Canyon, Berkeley Hills, 1 ♂, 17 January 1962, on bark *Quercus agrifolia* (J. Powell). San Francisco Co.: San Francisco, 1 ♂, 24 February 1926 (H. H. Keifer); Golden Gate Park, 2 ♂, 17 February 1960, “flying nr. *Quercus agrifolia*” (P. H. Arnaud, Jr.), 93 ♂, 24 ♀, 18–26 February 1960, on bark *Q. agrifolia* (P. H. Arnaud, Jr., C. D. MacNeill, and J. Powell), 7 ♂, 4 ♀, 3 March 1960, “coll. on trunk *Quercus agrifolia*” (1 pair *in copulo*) (P. H. Arnaud, Jr.), 1 ♂, 1 ♀, 10 March 1960 (C. D. MacNeill), 1 ♂, 1 ♀, 18 March 1960 (P. H. Arnaud, Jr., and J. Powell), 8 ♂, 6 ♀, 6–14 February 1961 (P. H. Arnaud, Jr., P. P. Cook, C. D. MacNeill, and D. C. Rentz), 8 ♂, 9 ♀, 28 February 1961 (P. P. Cook and C. D. MacNeill), 1 ♂, 2 March 1961 (P. H. Arnaud, Jr.), 1 ♂, 10 February 1962 (B. R. MacLennan). Deposited in the American Museum of Natural History, British Museum, California Academy of Sciences, California Insect Survey, and U. S. National Museum.

*Taxonomic discussion*.—Length of forewing range in paratypes, males 7.2–8.5 mm, females 7.3–8.6 mm. Although the wing pattern is variable in terms of development and intensity of the grey mottling, the moths have essentially the same superficial appearance. The sexual dimorphism in wing color is quite constant, and the less variable females are distin-





## EXPLANATION OF FIGURES

Figs. 1-3. Male genitalia of *Chimoptesis*, ventral aspect. 1, *C. chrysopyla* Powell; 2, *C. matheri* Powell; 3, *C. pennsylvaniana* (Kearfott). Figs. 4-6. Female genitalia of *Chimoptesis*. 4, *C. chrysopyla*, structures of segments VIII-X, lateral aspect, internal structures, dorsal aspect; 5, *C. matheri*, internal structures, dorsal aspect; 6, *C. pennsylvaniana*, internal structures, dorsal aspect.

guishable from the males on color pattern in nearly every case. The dark basal patch, especially its straight, black outer margin, is always more contrasting in the females. In addition, males often have considerable development of pale brown scales marginal to the outer edge of the basal patch. This tends to diminish the distinctness of the contrast between the dark basal area and the dorsal blotch beyond. At times the brown is broadened so as to be visible to the naked eye, and is accompanied by scattered brownish scales beyond the ill-defined curved line outwardly marginal to the pale dorsal blotch. Occasionally males have the pattern reduced by a general fading of the dark grey and an infusion of pale greyish in the white areas, so that the markings are inconspicuous, although visible.

*Biology.*—The moths are found in association with coast live oak, *Quercus agrifolia*, in early spring before the new season's growth begins. At the type locality *C. chrysopyla* exists in a restricted colony, associated with a small grove of eight or ten trees, yet as many as 50 adults have been taken there in an hour's time. During midday both sexes rest on the bark of the trunk and large branches, mostly about 3 to 5 feet above the ground, apparently without correlated orientation as to shade and light. Most individuals were observed in crevices, depressions, etc., where they experience a very cryptic concealment on lichen- and alga-covered surfaces. They appear to have an increased activity on warmer days, but occasional records of light attraction suggest that the species is normally nocturnal or crepuscular. When disturbed, the moths often do not fly but "jump" outwards and fall, feigning death. On the ground they are extremely difficult to locate among the leaf litter due to this habit.

Repeated sampling of the leaf-feeding caterpillar community of *Q. agrifolia* in the Bay area has not produced *C. chrysopyla*. This fact, together with the reaction of the abdominal contents of the adults in caustic solution, leads me to suspect that the species is a borer, perhaps in the crown region of *Q. agrifolia*. Painstaking search for the pupation site during February 1960 and January 1962 and 1963 has resulted in only indirect evidence. Examination of the bark where the moths congregate revealed cocoons of other species (Powell, 1963), but no trace of *Chimoptesis* was found. However, among the numerous pupae and pupal shells in the leaf litter and soil under the oaks was a tortricid pupal shell, which may be that of *C. chrysopyla*. Several were found on the surface of the sandy soil around the bases of the trees, and one was discovered protruding from a hard, dirt-covered case affixed to the bark just at the soil level. These pupal shells are similar to those of the related moth, *Pseudexentera habrosana* (Heinrich), but differ in the armature of the final abdominal seg-



ments, particularly the cremaster, which consists of a circle of heavy triangular spurs, rather than the pair of lateral spurs of *P. habrosana* (Powell, 1961). The latter species, an oak foliage feeder, has been taken in small numbers at the site flying with *C. chrysopyla*.

**CHIMOPTESIS GERULAE** (Heinrich), new combination

*Griselda gerulae* Heinrich, 1923, U. S. Natl. Mus. Bull., 123: 187, fig. 324.

This species was described from New Brighton, Beaver County, Pennsylvania, from a male and female collected 26 March 1902 by H. D. Merrick. The moth has remained poorly known and at present nothing can be added to the biology, distribution, or description beyond that given by Heinrich.

The forewing is described as "pale dull ochreous fuscous" with a "white patch on the middle of dorsal margin followed and preceded by a faint shading of blackish fuscous," and with a somewhat irregular, curved line of black from mid costa to upper angle of cell. A photograph of the male genitalia was given by Heinrich (1923, fig. 324). In these structures the present species resembles *C. chrysopyla* but differs markedly by the possession of short, horn-like projections from the tegumen at the posterior bases of the socii. *C. gerulae* is similar to the following species both in external appearance and in male genitalia, differing mainly by the smaller, narrower valvae.

**Chimoptesis matheri** Powell, new species

A moderately small, dull brownish-grey moth, the forewings usually showing a dark basal area and subterminal longitudinal streak; occasionally with a whitish dorsal patch.

*Holotype male*.—Length of forewing 6.9 mm. *Head*.—Length of second segment of labial palpus about equal to vertical eye diameter, greatly expanded distally by spreading scales into a broad, rounded tuft; brownish exteriorly with some intermixed white scales, forming a more or less defined spot near apex, whitish interiorly; third segment about two-fifths the length of second, protruding well beyond scaling of second, appressed-scaled, brownish. Scaling of antenna brown, of head pale brownish, the bifid scale tips white. *Thorax*.—Scaling brown dorsally, shining white ventrally; scaling of pro- and mesothoracic legs brown exteriorly with pale tarsal and tibial bands, whitish interiorly, metathoracic leg (one lacking from holotype) whitish. *Forewing*.—Length about 3.1 times width at end of cell; costa very slightly bent beyond fold, termen strongly angled back, slightly concave; costal fold slightly greater than one-third costa length, enclosed brush white, becoming grey in distal half, of about 36 stiff hairs, appressed, broad scales black near base of fold, white in central area, dark grey in distal half, subcostal (upper) area inside fold with a dense covering of modified, black sex scaling (as in *Proteoteras*) along

distal half. Wing scaling ground color brownish, heavily infused with pale ochreous tinged with reddish, except adjoining dark markings; a blackish streak along lower fold from base to middle of wing, a second, short streak through end of cell, separated beyond by ground color from a third streak just before apex; two leaden-colored bars in terminal area extending downward below subapical streak, irregularly replaced by ground color; a series of whitish dashes on outer third of costa. Fringe dark brownish at apex, becoming shining pale grey towards and around tornus. Underside pale grey-brown, whitish along dorsum, the pale costal dashes reproduced. *Hindwing*.—Apex acute, termen straight. Dark grey, slightly paler towards base; fringe pale, shining grey with a darker basal band. Underside dirty whitish, clouded with grey scales along costal area and distal portions of veins. *Abdomen*.—Scaling dark brownish grey including genital tuft; scaling of valvae white. Genitalia as in Fig. 2 (drawn from paratopotype, JAP prep. No. 1258, five preparations examined); margin of tegumen with sclerotized projections at posterior bases of socii; gnathos arms weakly sclerotized at bases, becoming membranous at their junction; aedeagus truncate, vesica at times with a bundle of a dozen or more long, thin cornuti.

**ALLOTYPE FEMALE**.—Length of forewing 6.9 mm. Essentially as described for male, lacking antennal setation and costal fold; forewing broader in basal third. Ground color brownish, generally darker than in male, with less ochreous scaling; dark basal streak of fold contiguous with a basal patch over inner one-third of dorsum, margined outwardly by a distinct, vertical line; dark streaks of distal part of wing also broadened but not well defined; area between leaden bars a more well-defined "ocellus" of ochreous marked by two or three horizontal black hairlines. Genitalia as in Fig. 5 (drawn from paratopotype, JAP prep. No. 1486, three preparations examined); dorsum of abdominal segments IX–X without lobe-like development; sterigma a simple, straight margined plate, ductus bursae looped, with an elongate, subbasal sclerotized region.

*Holotype male* and allotype female, CLINTON, HINDS COUNTY, MISSISSIPPI, 27 January 1960 and 10 February 1959, respectively (Bryant Mather; nos. 3750, 573), deposited in the California Academy of Sciences. Seventeen paratypes as follows: Clinton, Hinds Co., Miss., 5 ♂, 3 ♀, 7–13 February 1959, 2 ♂, 27 January 1960, 1 ♂, 4 February 1960, 2 ♂, 1 February 1963 (Bryant Mather); Pensacola, Escambia Co., Florida, 2 ♂, 24 and 26 January 1962, 2 ♀, 5 and 22 February 1962 (Shirley Hills), deposited in collections of American Museum of Natural History, California Insect Survey, Shirley Hills, Bryant Mather, and U. S. National Museum.

*Taxonomic discussion*.—Range of length of forewing in paratypes, ♂ ♂ 5.9–7.1 mm, ♀ ♀ 6.7–7.5 mm. Most of the males are similar to the above description in forewing color pattern, but occasional examples show the dark basal patch described for the allotype. One male from Clinton has the pattern obliterated by infuscation over the whole forewing; only a streak or two of ochreous scales remain. A dark male from Pensacola has the dash marks of the costa continued downward into the

ground color as bluish leaden streaks; similar but ill-defined vertical streaks appear in the dorsal area. Both females from Pensacola and one from Clinton have a white dorsal patch immediately following the abruptly delimited dark basal patch. The white patch, which is not present on paratype males, is less well developed on one of the Pensacola specimens where it is accompanied by two well-defined ochreous costal blotches.

One additional male from Sarasota County, Florida (Siesta Key, 27 January 1954, C. P. Kimball) has been studied and not designated as a paratype. It is smaller (forewing length 5.4 mm) and has the forewing a rusty brown, showing the basal patch. The genitalia do not differ appreciably from *matheri*, however, so that it is referred here provisionally.

The species is closest anatomically to *gerulae* among known *Chimoptesis*; *matheri* differs by its broader valvae which are larger in relation to the tegumen, and by the forewing color pattern. In *gerulae* the white dorsal blotch is present on both sexes in the small series known.

Nothing is known of the biology of *C. matheri*. All the specimens were probably taken at lights.

#### CHIMOPTESIS PENNSYLVANIANA (Kearfott), new combination

*Proteopteryx albicapitana pennsylvaniana* Kearfott, 1907, Trans. Amer. Entomol. Soc., 33: 48.

*Griselda pennsylvaniana*, Heinrich, 1923, U. S. Natl. Mus. Bull., 123: 187.

This species was also described from New Brighton, Beaver County, Pennsylvania, the type having been collected in March. As the original citation indicates, it is similar in appearance to *Epinotia albicapitana* (Kearfott), which was described at the same time from California. Both species exhibit a sinuate margined pale dorsal area. Heinrich (1923) reported *C. pennsylvaniana* also from Massachusetts, Missouri, and Texas. Specimens I have examined from Mississippi (Clinton, Hinds Co., 10 February 1959, 10 and 22 March 1960; B. Mather) have a decided greenish tinge in the pale areas of the forewing which has not been mentioned for populations in other areas.

Since Kearfott devoted most of his discussion to *albicapitana* and no description has been given for *pennsylvaniana* subsequently, the species may be characterized as follows (based on specimens from Mississippi):

*Male*.—Length of forewing 7.6–8.0 mm. *Head*.—Labial palpus with length of second segment slightly greater than vertical eye diameter, greatly expanded by spreading scales into an apical, rounded tuft, dark brown exteriorly with some whitish scales along dorsal margin, whitish interiorly; third segment slightly greater than one-third the length of second, mostly exposed, appressed-scaled, dark brown.



Antennal scaling reduced, dark brown; setae small. Head scaling spreading, except appressed on front; front and crown white, lateral margins and tuft above front dark brown. *Thorax*.—Dorsal scaling mixed whitish and dark brown, either may be dominant, tegulae at times whitish tinged with greenish. Underside shining white; pro- and mesothoracic legs dark brown exteriorly except for distinct white tibial and tarsal bands. *Forewing*.—Costal fold on basal one-third, costa nearly straight beyond; enclosed brush and appressed scaling of costal fold as in *C. matheri*, including the black sex scaling of subcostal (inner) area. Ground color blackish, dorsum with a broad white band from base to tornus, irregularly blotched with pale green, separated from ground color by a distinct, sinuate line, curving into dorsal area at one-fourth, into dark ground just before middle of wing; dorsal area broken by a recurved extension of ground color just before tornus, continued beyond, reaching nearly to mid-termen. Ground color mottled, irregularly blotched with paler areas and with about six pale costal dashes in basal half; costa with a small V-shaped white mark before apex. Fringe concolorous, becoming shining pale grey towards tornus. Underside dull grey, the pale costal marks reproduced; whitish in dorsal area. *Hindwing*.—Pale shining grey above; whitish below, becoming greyish towards outer margin. *Abdomen*.—Shining pale greyish, anal tuft paler, scaling of valvae whitish. Genitalia as in Fig. 3 (drawn from plesiotype, Clinton, Miss., JAP prep. No. 1491, two preparations examined); tegumen without posterior projections except rudimentary bumps at posterior bases of socii, latter rather rectangular, with conspicuous, posteriorly directed brushes of stiff setae; cucullus well developed, elongate.

*Female*.—Length of forewing 7.9 mm. Essentially as described for male, forewing without costal fold, appearing broader. Ground color slightly less mottled, darker, especially towards dorsal area, the marking more contrasting. Genitalia similar to *C. matheri*, differing by the more rounded sterigma and greater development of sclerotization on the ductus bursae, as in Fig. 6 (drawn from plesiotype, Clinton, Miss., JAP prep. No. 1487, one preparation examined).

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#### LITERATURE CITED

- BLAIS, J. R. 1961. Notes on the biology of *Griselda radicana* (Wlsh.) (Lepidoptera: Olethreutidae). Canadian Entomol., 93: 648-653.  
BRADLEY, J. D. 1959. An illustrated list of the British Tortricidae. Part II: Olethreutinae. Entomol. Gazette, 10 (2): 60-80, 19 pl.  
ESSIG, E. O. 1941. Itinerary of Lord Walsingham in California and Oregon, 1871-1872. Pan-Pac. Entomol., 17 (3): 97-113.

- FORD, L. T. 1949. A guide to the smaller British Lepidoptera. So. London Entomol. and Nat. Hist. Soc., London. 230 pp.
- HEINRICH, C. 1923. Revision of the North American moths of the subfamily Eucosminae of the family Olethreutidae. U. S. Natl. Mus. Bull., 123, 298 pp., 59 pl.
- MEYRICK, E. 1895. A handbook of British Lepidoptera. MacMillan and Co., London. vi + 843 pp.
- OBRAZTSOV, N. S. 1945. Versuch einer systematischen Übersichte der europäischen Eucosmini-Gattungen (Lepidoptera, Tortricidae). Zeitschr. Wiener Entomol. Ges., 30: 20-48.
- PIERCE, F. N., AND J. W. METCALFE. 1922. The genitalia of the group Tortricidae of the Lepidoptera of the British Islands. Pierce and Metcalfe, Liverpool, England. xxii + 102 pp., 34 pl.
- MCLEOD, J. M., AND J. R. BLAIS. 1961. Defoliating insects on field spruce in Quebec. Canadian Dept. Forestry, Forest Biol. Div., Bi-Mon. Progr. Rept., 17 (1): 2.
- POWELL, J. A. 1961. Taxonomic and biological observations on *Pseudexentera habrosana* (Heinrich) (Lepidoptera: Tortricidae). Pan-Pac. Entomol., 37 (4): 203-209.
1963. Note on cocoons of *Periclista linea* Stannard and *Celama minna* Butler. In Proc. Pacific Coast Entomol. Soc., 281st meeting. Pan-Pac. Entomol., 39 (1): 62-63.
- SIPPELL, W. L., J. E. MACDONALD, AND A. H. ROSE. 1962. Province of Ontario. Forest insect survey. In Canadian Dept. Forestry, Ann. Rept. Forest Ins. and Dis. Surv., 1961, pp. 55-72.

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ZOOLOGICAL NOMENCLATURE: Notice of proposed use of plenary powers in certain cases (A. [n.s.] 62)

In accordance with a decision of the 13th International Congress of Zoology, 1948, public notice is hereby given of the possible use by the International Commission on Zoological Nomenclature of its plenary powers in connection with the following cases, full details of which will be found in *Bulletin of Zoological Nomenclature*, Vol. 21, Part 1, published on 25 March 1964.

(6) Designation of a type-species for *Hypercompe* Hübner, (1819) (Insecta, Lepidoptera). Z.N. (S.) 1611.

Any zoologist who wishes to comment on the above case should do so in writing, and in duplicate, as soon as possible, and in any case before 25 September 1964. Each comment should bear the reference number of the case in question. Comments received early enough will be published in the *Bulletin of Zoological Nomenclature*. Those received too late for publication will, if received before 25 September 1964, be brought to the attention of the Commission at the time of the commencement of voting.

All communications on the above subject should be addressed as follows: The Secretary, International Commission on Zoological Nomenclature, c/o British Museum (Natural History), Cromwell Road, London, S. W. 7, England.—W. E. CHINA, *Acting Secretary to the International Commission on Zoological Nomenclature*.